

# Child and Family-Focused Cognitive-Behavioral Therapy for Pediatric Bipolar Disorder: Pilot Study of Group Treatment Format

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## ABSTRACT

**Introduction:** This study is a preliminary report of a group adaptation of child- and family-focused cognitive behavior therapy (CFF-CBT) for pediatric bipolar disorder (PBD). **Methods:** CFF-CBT group treatment was provided to twenty six families who had children with a diagnosis of PBD ranging between six- and twelve-years-old. **Results:** Results indicated that CFF-CBT was feasible and acceptable to families. CFF-CBT resulted in significant improvement in manic, but not depressive, symptoms and in children's psychosocial functioning post-treatment. In addition, although not statistically significant, parents reported an increased ability to cope with their child's illness. Results of this study suggest that group psychosocial treatment provided alongside pharmacotherapy may help attain remission of symptoms, as well as increase overall psychosocial coping and well-being in both children and parents. **Conclusion:** Future work must include a more rigorous test of CFF-CBT in a randomized controlled trial.

**Key words:** treatment, bipolar disorder, family, cognitive behavior therapy, child

## RÉSUMÉ

**Introduction:** Cette étude est un rapport préliminaire sur le traitement du trouble bipolaire par thérapie cognitivo-comportementale de groupes parents-enfant. **Méthodologie:** La thérapie de groupe a été proposée à vingt-six familles dont les enfants, âgés de 6 à 12 ans, avaient reçu un diagnostic de trouble bipolaire. **Résultats:** La thérapie cognitivo-comportementale de groupe est faisable et bien reçue par les familles. Elle permet d'atténuer significativement les symptômes de manie, mais non pas ceux de dépression, et d'améliorer le fonctionnement psychosocial des enfants après traitement. De plus, bien que cela soit sans intérêt du point de vue statistique, les parents ont déclaré être mieux outillés face à la maladie de leur enfant. Les résultats de cette étude indiquent qu'un traitement psychosocial de groupe suivi d'une pharmacothérapie aide à la rémission des symptômes, améliore les aptitudes psychosociales globales et contribue au bien-être des enfants et des parents. **Conclusion:** La thérapie cognitivo-comportementale de groupe devra faire l'objet d'une étude clinique aléatoire avec témoin plus rigoureuse qui s'inscrira dans le cadre d'un projet de recherche.

**Mots-clés:** traitement, trouble bipolaire, famille, thérapie cognitivo-comportementale, enfant

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## Introduction

Pediatric bipolar disorder (PBD) is a chronic and debilitating illness characterized by mixed mood states, rapid cycling, excessive elation, prominent irritability, and frequent comorbid conditions (Birmaher et al., 2002; Findling et al., 2001; Geller et al., 1998a; McClellan et al., 1999; Wozniak et al., 1995). These symptoms are associated with substantial disruption in psychosocial and family functioning, including difficulty in peer relationships, school problems, poor sibling relationships, parent-child relationships characterized by frequent hostility and conflict, ineffective problem solving, and poor agreement on parenting strategies (Geller et al., 2000; Goldstein et al., 2009; Schenkel et al., 2008). The multitude of psychosocial impairments associated with PBD has led to consensus that psychosocial treatment adjunctive to medication is an important ingredient of comprehensive treatment for PBD (McClellan, Kowatch, & Findling, 2007). Despite this recognition, however, evidence-based psychosocial treatments for children with

bipolar disorder are relatively few in number (i.e. Fristad et al., 2002; Miklowitz et al., 2008).

Child and family-focused cognitive-behavioral therapy (CFF-CBT) is an adjunctive psychosocial intervention designed to meet the developmental needs of children aged 8-12 with bipolar disorder and their families (Pavuluri et al., 2004b; West et al., 2007). CFF-CBT comprises four innovative aspects in the treatment of PBD. It is developmentally specific to children aged 8-12; it is driven by the specific needs of these children and their families; it involves intensive therapeutic work with parents parallel to the work with children in a unique family-based model; and it integrates psychoeducation, cognitive-behavioral therapy, and interpersonal therapy techniques across multiple domains to address the impact of PBD in the child's broader psychosocial context. To our knowledge, there is no other psychosocial treatment for PBD that combines these components in the same way. CFF-CBT is a 12-session treatment program delivered weekly over the course of three

**Table 1. CFF-CBT Group Session Objectives**

	<b>Parent</b>	<b>Child</b>
<b>Session 1</b>	- Introduction and overview	- Introductions and group rules
<b>Session 2</b> <b>Psychoeducation</b>	- Unique characteristics of PBD	- Discussion of symptoms and medication
<b>Session 3</b> <b>R for routine</b> <b>A for affect regulation</b>	- Establishing routines - Recognizing and managing children's affect	- Recognizing difficult feelings - Affective education and expression
<b>Session 4</b> <b>I for "I can do it!"</b>	- Positive self-talk and positive thinking	- Positive self-talk and positive thinking
<b>Session 5</b> <b>N for "No negative thoughts" and "Live in the Now"</b>	- Reframing negative thoughts - Focus on the present moment/mindfulness	- Helpful and unhelpful thoughts
<b>Session 6</b> <b>B for "Be a good friend"</b>	- Modeling empathy - Opportunities for positive social interaction	- Social skills training
<b>Session 7</b> <b>O for "Oh, how do we solve this problem?"</b>	- Problem-solving around affective storms	- Good communication
<b>Session 8</b>	- Communication skills - Behavioral management	- Coping skills/problem-solving
<b>Session 9</b>	- Family problem-solving	- Coping skills/problem-solving
<b>Session 10</b> <b>W for "Ways to find social support"</b>	- Self-care - Social support	- Creating pleasant memories - Finding social support
<b>Session 11</b>	- Reflecting on group experience and review	- Reflecting on group experience and review
<b>Session 12</b>	- Planning for next steps	- Group celebration - Highlight positive qualities and strengths

months, with the goal of improving symptomatic functioning, as well as increasing psychosocial and family functioning. Initially developed for an individual psychotherapy format, we modified the program to a multi-family group format in recognition of the enhanced parental support and information exchange that would likely occur in this setting, as well as the opportunity for children to practice interpersonal skills and have positive social experiences through group work. CFF-CBT is nicknamed "RAINBOW" treatment for its 7 main ingredients (for session details see Table 1). The treatment ingredients and content are identical to the individual therapy format, but delivered in 2 parallel parent and child groups. Previous open trial research has indicated that CFF-CBT in its individual format is feasible, acceptable, and may result in symptom and functional improvement (Pavuluri et al., 2004b); this study represents the preliminary open trial of the treatment in its group format.

Aspects of psychosocial functioning may be important outcome indicators of quality of life, as well as poten-

tial mediators between the intervention and traditional indicators of treatment response such as symptom management and treatment adherence. To date, there are few studies that have examined specific psychosocial variables as outcomes and/or mediators in psychosocial treatment studies for children and adolescents with bipolar disorder. Fristad and colleagues (2006) reported findings from studies on their multi-family psychoeducation group (MFPG) treatment for PBD that indicated participation in MFPG was associated with changes in knowledge about the disorder, coping skills, and social support, as well as improved family interactions and positive attitudes in young children with bipolar disorder and their families. Findings reported by Miklowitz and colleagues (2006) on their family-focused treatment (FFT) for adolescents with bipolar disorder suggested a potential mediating role for maternal expressed emotion and chronic life stress in treatment effects. Studies such as these are important because they represent initial explorations of how psychosocial interventions may operate

over the course of treatment to affect both symptom-related and functional outcomes. Continued work in this area will contribute to the dismantling of psychosocial treatments, aid in the identification of key treatment ingredients, and enable the development of optimally efficacious, yet practical and efficient psychosocial treatment models.

In light of the limited number of evidence-based psychosocial approaches to the treatment of PBD, and the scarcity of knowledge on how psychosocial treatment directly influences potentially important functional outcomes, the objectives of the current study were three-fold. First, as this study comprised the preliminary open trial pilot study of group CFF-CBT, the primary objective was to establish the feasibility and acceptability of the treatment as delivered in its group format. Second, because of the potential importance of psychosocial factors both as important key outcomes related to quality of life, as well as potential mediators in treatment outcome, the secondary objective was to collect pilot data on psychosocial factors related to PBD, in addition to assessing improvement in symptomatic functioning. Child's global psychosocial functioning, parenting stress, and parent's knowledge and self-efficacy related to coping with PBD were chosen as the psychosocial outcomes of interest in this study because we believe these domains could represent barriers to achieving optimal treatment response if not addressed adequately. Third, to inform our future studies on treatment mechanisms, we examined the relation between parent functioning at post-treatment (parent's stress, knowledge, self-efficacy) and children's symptom experience and improvements in psychosocial functioning post-treatment, to explore the potential for parent functioning to mediate child outcomes. Thus, the study hypotheses were that: (1) CFF-CBT group treatment would be feasible to deliver and acceptable to families; (2) CFF-CBT group treatment would be associated with symptom improvements, as well as improvements in child's psychosocial functioning, parenting stress, and parental knowledge and self-efficacy related to coping with the disorder; and (3) improvements in parenting stress, knowledge about PBD, and sense of efficacy in managing symptoms and coping with the disorder, may relate to improvements in children's symptom experience and psychosocial functioning.

## Methods

### Sample

Participants were recruited through the Pediatric Mood Disorders Program using an IRB approved protocol and consent/assent procedures. Participants included 15 boys and 11 girls ranging in age from 6 to 12 ( $M = 9.45$  years,  $SD = 1.93$ ). Participants were 54% Caucasian, 12%

African American, 19% Latino, and 16% multi-ethnic. Although CFF-CBT is primarily designed for 8 to 12-year olds, a wider age range of subjects was included as an exploratory exercise. Specifically, three 6 and 7 year olds who were deemed cognitive and emotionally mature enough to benefit from the treatment by their referring clinicians were permitted to participate. Data was collected from 5 groups over the course of 3 years that ranged in size from 3 to 11 participants. Thirty-one percent ( $n=8$ ) of participants who were recruited into the study were deemed treatment non-completers due to their attrition from the program over the course of the 12 weeks.

### Procedure

CFF-CBT group treatment is offered as an adjuvant treatment to standardized pharmacotherapy treatment in our pediatric mood disorders clinic. Entry criteria for the study included patients with PBD who agreed to participate in the group treatment and were currently followed regularly for pharmacotherapy in our clinic. The study PI and/or graduate research assistants attended the first session of each group to inform participants about the study and obtain consent/assent for those who wished to participate. Measures were completed at the first and last sessions. For the two child self-report measures, each child had a clinician working 1:1 with them to ensure they understood the questions and, when necessary, the measures were read to the child.

## Measures

### Diagnosis

All patients in our clinic are diagnosed with bipolar disorder using a full or abbreviated version of the Washington University Schedule for Affective Disorders and Schizophrenia (WASH-U-KSADS; Geller et al., 1996), which is a comprehensive diagnostic interview based on DSM-IV criteria. Parents were asked to report their child's primary diagnosis on a demographic questionnaire administered at session 1. Forty-six percent of children had a primary diagnosis of Bipolar Disorder Not Otherwise Specified; 39% Bipolar Disorder – Type I; and 4% with Bipolar – type II. Eleven percent of parents did not report their child's diagnosis on the demographic sheet; however, all children were referred by clinicians who knew a bipolar diagnosis was an inclusion criterion for the groups. Fifty-four percent of participants had comorbid ADHD; 8% a comorbid anxiety disorder; and 4% comorbid Asperger's disorder.

### Treatment feasibility and acceptability

Treatment feasibility was measured by the retention of families in treatment once recruited. Acceptability was

measured using a: (1) treatment expectancy questionnaire; and (2) a measure of consumer satisfaction. On the treatment expectancy measure, parents were asked about the degree to which they expected their child to benefit from treatment with the following item: "How much do you expect that the RAINBOW group will affect your child's mood illness? I expect my child's mood problems will be..." Responses could range from 1 = very much improved to 7 = very much worse. As we were interested primarily in expectations for improvement, we recoded this scale to a 0 to 3 scale including, 0 very much worse to no change, 1 minimally improved, 2 much improved, 3 very much improved. The consumer satisfaction measure asked parents to answer a series of questions (e.g. My child seems to communicate more effectively; I felt supported by the group.) on a Likert scale ranging from 1 (not true) to 3 (very true).

### Symptoms

The Children's Depression Inventory (Kovacs, 1985) is a reliable and valid child report measure of symptoms of depression, consisting of 27 items on which the child chooses from three choices, with suggested clinical cut-offs of 12 or 13 in clinical samples.

The Child Mania Rating Scale – Parent version (CMRS-P; Pavuluri et al., 2006) is a 21-item screening tool for pediatric mania symptoms based on DSM-IV criteria. Internal consistency and retest reliability are both excellent. This measure has demonstrated sensitivity and specificity in differentiating children with mania from healthy controls and those with ADHD.

### Child Psychosocial Functioning

The Strengths and Difficulties Questionnaire (SDQ; Goodman et al., 2000) is a reliable and valid screening instrument to assess children's overall psychosocial functioning. Twenty five items address emotional symptoms,

conduct problems, hyperactivity/inattention, peer relationship problems, and prosocial behavior. Parent and child report measures were administered in this study. For each item, participants are asked to respond with one of the following responses: not true, somewhat true, certainly true. Each response has a value of 0, 1, or 2 (depending on the direction of the question) and values are summed to produce subscale and total scores, with lower scores reflecting better functioning. For the parent-rated forms, norms from a community population were used to create bounds for normal, borderline, and abnormal "caseness" with respect to mental health disorders (Bourdon et al., 2005).

### Parenting Stress

The Parental Stress Scale (Berry & Jones, 1995) assesses parent's feelings regarding the parent-child relationship, such as feeling overwhelmed, satisfied, close, and worried. Parents rate 18 items on a 5-point Likert scale ranging from strongly disagree to strongly agree. Higher scores indicate more stress associated with parenting their child. The scale has good test-retest reliability and has been well-standardized in several parent populations. Validity was established through the scale's correlation with other well-established measures of parenting stress, such as the Parenting Stress Index (PSI).

### Parent Self-efficacy and Coping

The Therapy Outcomes Parents Scale (TOPS) was developed to assess parent's feelings and perceptions regarding their child's bipolar disorder, including their knowledge about the disorder and sense of efficacy in coping with it. Sample items include: "I am able to identify my child's moods – and have words to describe them" and "I am able to avoid my own angry outbursts when responding to my child's negative behaviors." Parents

**Table 2. Clinical Measures Pre- and Post-treatment**

Measure	Pre-treatment	Post-treatment	Significance
CMRS-P Mania	28.14 (8.90)	20.07 (10.28)	.01
CMRS-P Depression	21.33 (10.87)	18.00 (10.57)	.16
CDI	6.11 (4.78)	7.22 (5.10)	.22
Parent SDQ	25.67 (5.29)	20.22 (6.06)	.01
Child SDQ	16.83 (4.59)	17.50 (7.16)	.75
PSS	49.13 (12.29)	45.31 (14.75)	.22
TOPS	65.78 (15.30)	77.23 (14.92)	.06

Note. Means (Standard Deviations). Paired t-tests were conducted on non-missing pre- post- data pairs. CMRS-P = Child Mania Rating Scale – Parent version; CDI = Children's Depression Inventory; SDQ = Strengths and Difficulties Questionnaire – Total Difficulties Score; PSS = Parental Stress Scale; TOPS = Therapy Outcomes Parent Scale.

rate 20 items on a 5-point Likert scale ranging from strongly disagree to strongly agree. Higher scores indicate greater knowledge and perceived self-efficacy in coping with the child's disorder. This face-valid measurement was developed for the purposes of this study. Chronbach's alpha was 0.86 at pre-test and 0.90 at post-test. Chronbach's alpha represents the mean of all possible split-half coefficients.

## Results

### *Treatment Feasibility and Acceptability*

Seventy percent of participants who were recruited into the study completed treatment. This rate of retention, though not ideal, appears relatively consistent with other family-based psychosocial intervention studies for childhood bipolar disorder (e.g. Fristad et al., 2003; Miklowitz et al., 2008). Reasons for attrition in this study included hospitalization of the child, barriers to weekly attendance (e.g. transportation, job restrictions), and significant life events.

Treatment expectancy was not correlated with any baseline demographic (e.g. age, gender, race, grade in school, parental occupation, and comorbid diagnoses) or outcome measures (all  $p > .05$ ). The median response for this item was two, corresponding to parental expectation that their child's mood problems would be much improved. Notably, only one parent reported feeling unsure whether or not treatment would improve her child's symptoms.

Responses on the measure of consumer satisfaction indicated that parents believed that the treatment had helped their child manage their mood symptoms and provided both tools and support for parents in managing their child's disorder. The average response was 2.7, on a scale of 1-3, with 3 indicating complete satisfaction.

### *Symptoms*

As indicated in Table 2, results of paired sample  $t$ -tests on non-missing data points indicated that participants in the CFF-CBT group treatment demonstrated significant improvements in bipolar symptomology as evidenced by differences between pre-treatment and post-treatment scores on measures of mania (CMRS-P mania;  $t = 3.30$ ;  $p = .01$ ,  $n = 14$ ). However, depression scores did not change significantly over the course of treatment (CDI;  $t = -1.27$ ,  $p > .05$ ,  $n = 18$ ).

### *Child's Psychosocial Functioning*

Results indicated that the pre- versus post- difference in children's ratings was not significant ( $p > .05$ ; see Table 2). In contrast, parent's ratings of their children's total psychosocial difficulties changed significantly ( $t =$

$3.13$ ,  $p = .01$ ,  $n = 13$ ). More specifically, parents' ratings on the conduct subscale were significantly reduced ( $t = 3.59$ ,  $n = 13$ ,  $p < .01$ ). While parents' ratings on the total difficulties scale still reflected clinically significant difficulties according to measure norms (range of 17-40 indicates abnormal "caseness"), these scores were reduced significantly after treatment (mean of 24 at baseline to 19 at post-test).

### *Parenting Stress*

Parents did not demonstrate a statistically significant decrease in stress related to parenting their child with bipolar disorder ( $t = 1.27$ ,  $p = .22$ ,  $n = 18$ ) from pre- to post-test.

### *Parent Self-efficacy and Coping*

A comparison of pre- and post-test TOPS scores approached significance ( $t = -2.11$ ,  $p = .06$ ,  $n = 13$ ). Overall, parents reported greater knowledge and perceived self-efficacy in coping with their child's disorder after participating in the CFF-CBT group.

### *Parent Functioning and Treatment Outcomes*

No significant associations were found between improvements in parent functioning and symptom reduction at post-test. However, several interesting associations were noted between parent functioning at post-treatment and increased psychosocial functioning in children at post-treatment, which may indicate targets for future treatment mechanism studies. Pearson correlations indicated that increased parent-reported knowledge and self-efficacy in coping with the disorder on the TOPS at post-test was significantly associated with decreased parent and child-reported conduct problems in children ( $r = -.70$ ,  $p = .01$ ); decreased child-reported emotional symptoms ( $r = -.67$ ,  $p = .01$ ); decreased child-reported total difficulties ( $r = -.70$ ,  $p = .01$ ); decreased levels of child-reported hyperactivity ( $.57$ ,  $p = .03$ ); and decreased parent-reported conduct problems ( $r = -.690$ ,  $p = .040$ ), on the SDQ. In addition, lower levels of parenting stress on the PSS at post-test was associated with increased child-reported pro-social behaviors at post-test on the SDQ ( $r = -.47$ ,  $p = .05$ ).

## Discussion

The current study explored the feasibility of child and family-focused cognitive-behavioral therapy (CFF-CBT) for PBD, comprised of group psychotherapy adjunct to pharmacotherapy, to decrease symptoms and increase functioning in children, while decreasing parenting stress, and increasing knowledge about the disorder and efficacy in coping in parents. Results suggest that this novel model

of group treatment for PBD is feasible to deliver in an outpatient psychiatric setting and may be associated with symptom reduction and improved psychosocial functioning in children. Of note, while parents reported significant improvements in their children's psychosocial functioning, children's reports were not consistent with parents and indicated no significant changes over the course of the study. Further, children's reports of psychosocial functioning were consistently lower than parent's at both baseline and follow-up (indicating that they thought they functioned better than their parents did). In light of evidence suggesting that parents are better reporters of symptoms and functioning than their children with bipolar disorder (Youngstrom et al., 2004), these data may indicate that children with bipolar disorder are likely to under-report their psychosocial difficulties. Interestingly, though non-significant, child reports of depression and psychosocial functioning indicated slightly increased impairment at post-treatment. This could be explained by the natural mood fluctuations inherent in PBD, biased reporting due to sadness at the group's termination, or a greater awareness of and language for difficulties associated the disorder because of the treatment. Also non-significant, but an important trend to report, is that parents reported an increase in knowledge and a sense of efficacy in coping with their child's illness after the treatment. Finally, results suggest that increased parent functioning may be associated with improvements in child's psychosocial functioning after treatment, signifying that a reciprocal association between parent and child functioning may be important to examine in future studies of psychosocial treatment mechanisms in PBD.

These findings are particularly notable in the context of the small sample size for this study, as well as the various factors impacting study implementation that present challenges to conducting treatment outcome research in children with severe mood disorders, including significant heterogeneity in symptom presentation, episodic mood fluctuations inherent to the disorder that make measuring change difficult, and frequent parental psychopathology that interferes with treatment and potentially with measurement.

#### *Clinical Implications*

The results of this study also have several important clinical implications for the treatment of PBD. The first is that the use of psychosocial treatment alongside pharmacotherapy may help attain remission of symptoms, as well as increase overall psychosocial coping and well-being in children. In this case, a model which included twelve sessions of group psychotherapy for both parents and children separately, delivered adjunct to psychopharmacol-

ogy, appeared to help children gain management of some of their symptoms and, from their parent's perspective, reach a healthier level of functioning over a three-month period. Whether the integration of psychotherapy alongside medication helps attain remission through increasing adherence, or works through addressing separate but important psychosocial themes has yet to be determined empirically, but is an important area for future research. The latter would be particularly novel in suggesting that an important component of attaining remission may be to address psychological and interpersonal themes, such as the development of positive coping strategies, a sense of self-efficacy, and healthy social relationships, which may improve quality of life and enable the child and family to better manage the symptoms of the disorder.

The notion that psychosocial treatment may address symptoms of PBD partially through influencing psychosocial and family functioning is consistent with findings from the child depression literature, which have found components such as affect education, anger management, cognitive restructuring, problem-solving, as well as parenting skills training, problem-solving training, and conflict resolution skills to address family functioning deficits to be successful in addressing mood symptoms (Stark et al., 1996). In addition, the use of a group treatment modality to deliver a CBT-focused intervention is supported by findings from group treatment studies for childhood depression (Clarke et al., 1999). The model adopted in this study is preliminary and does not incorporate methodology to test possible mechanisms of treatment effect. Future controlled clinical trials and treatment mechanism studies of psychosocial interventions such as this one will advance our knowledge of if and how psychosocial interventions actually impact symptomatic experience. Strengths of this study are that it is protocol-driven, includes multiple informants on outcome measures, and provides important preliminary information about the potential use of group-based psychosocial treatment methods to address PBD specifically, for which few evidence-based psychosocial interventions currently exist.

#### *Limitations*

The current study does have limitations that potentially detract from its impact. First, the study sample is relatively small, and therefore power to detect small and medium effects was minimized. This problem was exacerbated by missing data due to the attrition of families from treatment. In addition, there was no control group in the current study. This study was designed to be an initial open trial pilot study and plans for a controlled clinical trial are underway. Second, this study relied exclusively on self-report measures. The use of concurrent parent

and child report measures helps mitigate the potential negative effect of relying on self-report, but parent and child reports may be subject to biases, such as wanting to please the treatment team by reporting good outcomes. Third, all participants were concurrently treated with medication and the study design did not allow for discerning variance accounted for by medication versus psychotherapy in improvements. Fourth, younger children (ages 6-7) were included in the study sample, even though the treatment was ideally designed for children 8-12. These children were not formally screened for developmental level and they were too few in number to run separate analyses; therefore, we cannot state with certainty whether CFF-CBT is suitable for children in this younger age range. Finally, a causal relationship between the treatment and outcomes cannot be established with the current study design. Improvements could be due to the natural course of the disorder, stabilization on medication, or additional attention and structure, rather than the specific intervention. Future studies can incorporate a control group and treatment mechanism designs to address the limitations in the current open trial design.

Despite these limitations, this study represents an innovative initial endeavor into a crucial area for future research. There is a need for evidence-based psychosocial treatments for PBD to be used adjunctive to pharmacotherapy in order to combat the chronic, refractory, and devastating course of this illness. These kinds of integrated treatments, if researched and disseminated broadly, have the potential to significantly reduce the public health burden of PBD and improve the quality of life for children and families that are affected.

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The authors have no financial relationships or conflicts to disclose.

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